

February 27, 2024

Sean McCormick  
Environmental Scientist III  
Rhode Island Department of Environmental Management  
Office of Water Resources  
235 Promenade St.  
Providence, RI 02908

**2024 BWRP RFP Response & Grant Request**  
Bonnet Shores Fire District - Flood Prevention and Mitigation

Dear Mr. McCormick,

The Bonnet Shores Fire District (BSFD) is a quasi-municipality located within the Town of Narragansett, RI. Currently there are approximately 950 residences within the Fire District. The BSFD is a registered 501(c) 3 non-profit entity governed by a 7-member elected council.

The BSFD is seeking funding to provide for limited invasive phragmites management and hydraulic conveyance system upgrades at Wesquage Pond (owned by the Audubon Society of RI and managed by the Bonnet Shores Land Trust and the BSFD), a tidal pond connected to Narragansett Bay by a natural breachway.

Increased storm frequency and severity, coupled with an increase in impervious surfaces within the watershed, have resulted in inland storm flow greater than the current hydraulic conveyance system's management capacity. Severe storms also drive sand up through the Wesquage Pond outlet channel limiting the effectiveness of the undersized system. Although the BSFD regularly conducts dredging under CRMC Assent No: A2018-12-021 to open the channel; it still takes weeks for flood waters to recede off Bonnet Point Road - one of two emergency evacuation routes for the entire community. The flooding conditions have resulted in significant damage to adjacent roadways, residences, and to the natural ecosystem of the pond. This project is beneficial for the environment, public safety, and the Bonnet Shores community.

The BSFD is also seeking alternative funding sources in cooperation with the Town of Narragansett DPW to increase Bonnet Point Road elevation to account for expected sea-level rise, which will result in the protection of life and property as well as improved water quality and wetland preservation. These projects, individually and together, will benefit the health of the pond and its habitat, protect the pond front homes from flooding, and provide accessibility for residents, visitors, and public safety vehicles.

The BSFD has solicited engineering estimates from Verdantas, our environmental engineering consulting firm. The estimate to complete the work proposed in the grant application is \$800,000 - estimate details are attached to the application. The estimate is far greater than the BSFD TOTAL annual operating budget. As such, we are respectfully requesting your consideration of this application for grant funding as well as a reduced match in the amount of 75/25 to allow us to address this major issue impacting the residents and environment of Bonnet Shores.

*Carol O'Donnell*

Carol O'Donnell  
Bonnet Shores Fire District

## 2024 Bay & Watershed Restoration Fund Grant Application Package – Bonnet Shore Fire District

### **1. Purpose and Description of the Existing Need/Problem:**

**1a.)** Provide a brief, clear statement of the project purpose. Include overall project goal, and any objectives. Note which BWRP Grant Category the project fits under and explain why.

The Bonnet Shores Fire District (BSFD), a quasi-municipality incorporated in 1932 consisting of roughly 950 residents and located in the Town of Narragansett, is seeking BWRP Flood Prevention and Mitigation sub-funding to mitigate persistent flooding issues along Bonnet Point Road and to improve the water quality in Wesquage Pond.

Recommended improvements and objectives summarized below are consistent with the Wesquage Pond Watershed Management Plan prepared by the Bonnet Shores Land Trust (2023) and the Town of Narragansett Hazard Mitigation Plan (2023 Progress Report) - information from both reports are referenced throughout this application:

- Conduct a limited invasive management program to provide unobstructed water flow to hydraulic conveyance system components, to increase the pond storage capacity, and to support native species establishment.
- Engineer and install the following hydraulic conveyance system components:
  - A new channel culvert under the roadway to improve management of peak flows and improve watercourse continuity – to include a structure that limits sand movement inland during storm conditions.
  - Wesquage Pond equalization pipes (clear or replace) beneath Bonnet Point Road to enhance communication between Wesquage Ponds.
  - A back-up flood mitigation conduit between Wesquage Pond and Narragansett Bay to provide additional outlet capacity during peak flows.
- Work with the town to continue GSI efforts throughout the watershed to slow inland stormwater flows to the pond and to improve water quality.
- Install a remote monitoring system and develop an O&M program for suggested alternatives to increase the sustainability of infrastructure and the Wesquage Pond ecosystem.

The goal of the hydraulic conveyance system improvements is to increase the free flow of water between Wesquage Ponds and to Narragansett Bay. Implementation will result in less frequent flood events and, when floods occur, reduced periods of flood duration. The goal of the greater watershed improvements is to improve the health and sustainability of the Wesquage Pond Watershed ecosystem.

The BSFD is also seeking alternative funding sources in cooperation with the Town of Narragansett DPW to increase Bonnet Point Road elevation to account for expected sea-level rise, which will result in the protection of life and property as well as improved water quality and wetland preservation.

### **1b.) Describe the existing problem (water quality, habitat, and/or flooding), including as applicable:**

- *Types of nonpoint pollution sources and water quality impairments or threats addressed by the project, including the primary and secondary pollutant(s).*

The problems we intend to address with the proposed improvements are persistent flooding of Bonnet Point Road and ecosystem and water quality degradation within the Wesquage Pond Watershed. Primary concerns affecting these problems are land development and climate change.

Water Quality - As noted in the Wesquage Pond Watershed Plan and anecdotal information provided by area stakeholders, the characteristics of Wesquage Pond have changed over the years with the increase in nonpoint sources of pollution – primarily stormwater, wastewater, and fish, pet and waterfowl waste. Pollutants include bacteria and other pathogens that limit recreation use of waters; nutrients (nitrogen and phosphorus) that result in algal blooms; and salt and sand from winter road safety maintenance.

Habitat - In this heavily developed watershed, there are only a few riparian areas, which are generally surrounded by greenspace. Degradation to aquatic habitat within this watershed includes direct and indirect disturbance to wetlands primarily by means of cutting vegetation, water diversion, road crossings and loss of vegetated upland buffers, which filter out sediment, nutrients, pesticides, and other pollutants coming from the landscape. Habitat degradation in Wesquage Pond is evidenced by significant Phragmites growth – roughly 22-acres of growth since 1990 – see Figure 1 below depicting areas of Phragmites growth. Phragmites not only impede water flow and reduce pond storage capacity, leading to increased flooding issues, but also displace native plant species critical to the ecosystem's health.



Figure 1. Area of invasive phragmites growth in Wesquage Ponds.

Flooding - In addition to degraded water quality and habitat, Bonnet Point Road experiences flooding 15-20 times per year according to personal accounts from residents. Based on review of data from three local rainfall gages, rain events of approximately 1 inch or more are the size of event that triggers flooding of Bonnet Point Road. The Figure below shows the rainfall gage closest to Wesquage pond used in the review of rainfall event and roadway flooding correlation.

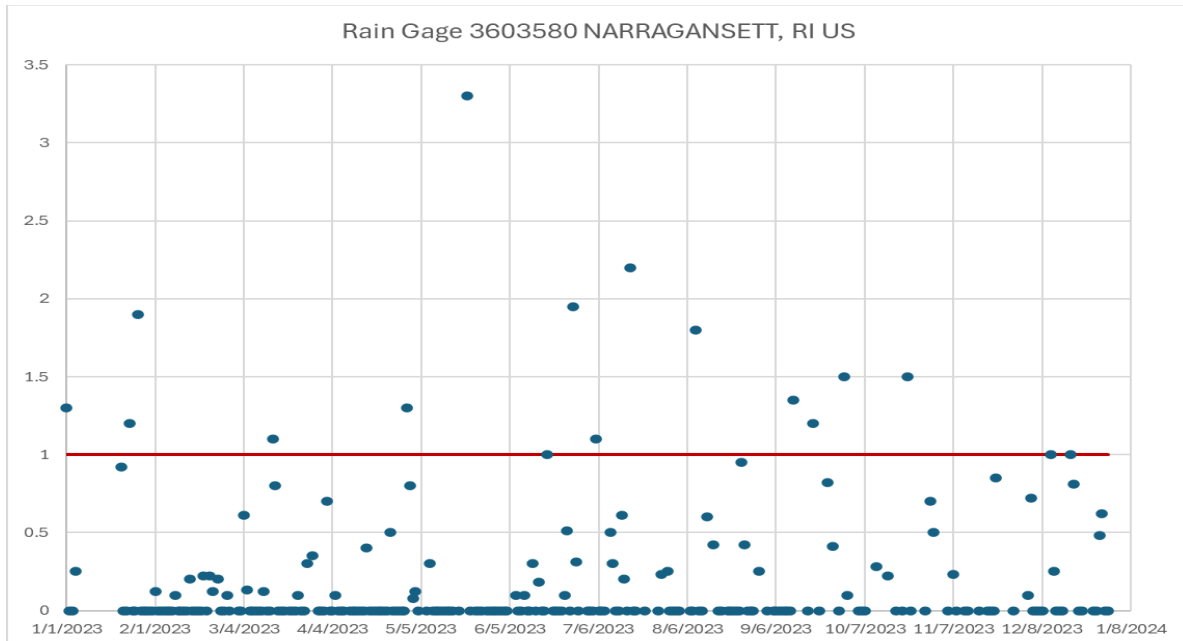


Figure 2. Rainfall events during 2023 calendar year. The red line depicts rainfall amounts greater than 1 inch.

Hydraulic modelling results also confirm that flooding of Bonnet Point Road could occur with a storm event of >1-inch. Contributing factors to overtopping the roadway include; pond elevation at the time of the storm, the loss of pond storage capacity from phragmites encroachment, reduced time for stormwater to reach the pond due to watershed development, equalization pipe maintenance, outlet culvert and channel size, and the reduced capacity of the outlet culvert and channel attributed to sand deposition from storms and high tide events. Culvert capacity is minimized by sand accumulation from the beach as high tides and storm surges transport sand into the culvert and Wesquage Pond. This is a normal part of coastal lagoon and dune formation but also a primary contributor to flooding and property damage.

Sea-level rise and will continue to affect flooding in the southern portion of the Wesquage Pond Watershed. At the NOAA tide gage in nearby Newport, RI, an average of 2.92 mm (0.115 inches) of sea level rise has been observed per year, as illustrated in Figure 3 below.

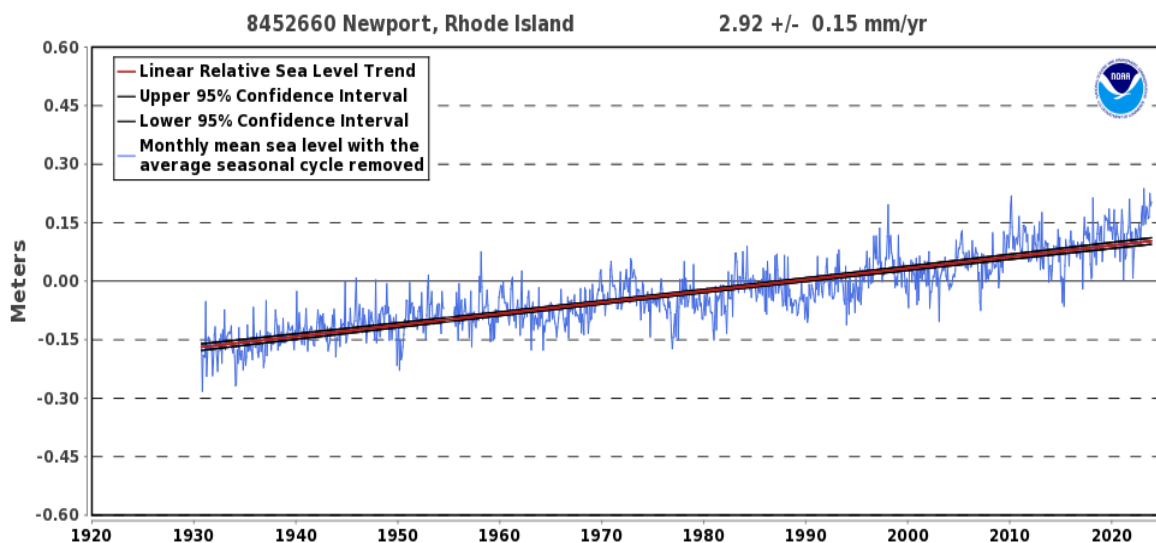


Figure 3 – Sea level rise trend, Newport, RI (NOAA)

For the Northeast US, NOAA's intermediate scenario predicts 0.43 meters (1.4 feet) of sea level rise by 2050 and 1.3 meters (4.3 feet) by 2100. Two feet of sea level rise is expected by around 2065 per the intermediate scenario. Figure 4 below shows the area to be inundated by 1-foot and 2-feet of sea level rise. The map illustrates that Bonnet Point Road and much of the adjacent land will be regularly inundated with 2-feet of sea level rise.



Figure 4 – Sea level rise inundation areas (RI CRMC RI CRMC Climate Change/Sea Level Rise)

**1b.) Describe the existing problem (water quality, habitat, and/or flooding), including as applicable:**

- The existing degradation to aquatic habitat (i.e., presence of invasive aquatic species)

Again, according to the Wesquage Pond Watershed Management Plan there are approximately 22-acres of invasive species, *Phragmites australis*, bordering the Wesquage Pond. *Phragmites* degrades the habitat of the pond and the watershed by dominating and displacing native plant species critical to the ecosystem's health. *Phragmites* also cause impediments to fish passage and impedes the flow of water, leading to more flooding issues in the watershed.

Bamboo (*Phyllostachys spp*) and Japanese knotweed (*Fallopia japonica*) are also common in the watershed and further reduce habitat quality by crowding out native plants.

**1b.) Describe the existing problem (water quality, habitat, and/or flooding), including as applicable:**

- How long has the problem been in existence, or when was the problem first noticed.

According to the RIDEM Environmental Resource Map (aerial photographs), Bonnet Point Road was built before 1939. *Phragmites* growth is evident on aerial photographs after 1988, prior to 1988 the surface area of Wesquage pond was relatively consistent with the 1939 aerial photograph at roughly 100-acres in size.

Frequency and persistence of flooding along Bonnet Point Road became a nuisance that required regular maintenance of the pond's outlet channel in the 1990s. Robert Barber, Jr., of R. Barber Trucking (Barber), provided channel clearing services from the mid-1990's to 2017. According to Barber in a 2017 letter to the BSFD, "Due to the build-up of sand at the mouth of the channel, we can no longer maintain a level in the pond that is adequate for road safety and for existing homes around the pond due to larger storms forcing more sand into the pond. It is impossible in this situation to get enough pressure at the mouth of the channel to keep the channel open during higher tides. In prior years, we were able to keep water below the road surface at a minimum of 12". Now we can barely keep the water off the road surface."

Increased storm frequency and severity, coupled with an increase in impervious surfaces within the watershed, have resulted in inland storm flow greater than the current hydraulic system's management capacity. As mentioned above, severe storms also drive sand up through the Wesquage pond outlet channel limiting the effectiveness of the undersized system. The BSFD conducts beach side dredging under CRMC Assent No: A2018-12-021 to open the channel following flooding events; however, even following dredging, it still takes days for flood waters to recede off Bonnet Point Road. Bonnet Point Road is one of two emergency evacuation routes for the entire community and clear passage is critical to the community's safety.

**1b.) Describe the existing problem (water quality, habitat, and/or flooding), including as applicable:**

- *Describe the technical basis for the project and prior planning that has taken place. If applicable, provide the name of the TMDL, lake management plan, or watershed restoration plan that provided basis for proposed project.*

As provided in the "Wesquage Pond Watershed Management Plan, September, 2023" report, Wesquage pond is an assessed water body within this watershed and is identified as waterbody segment RI0007027E-07. The 2022 Integrated Report Waterbody Table lists Wesquage Pond watershed as a Category 2 waters, which means some designated uses are "fulling supporting" and more data is needed for other designated uses. Fish and wildlife habitat, primary contact recreation, and secondary contact recreation are all fulfilling Fully Supporting USE Attainment Status. There is insufficient information on fish consumption and shellfish consumption has not been assessed.

Water testing of Wesquage Pond has been completed by several organizations. A summary of data prepared by the University of Rhode Island Watershed Watch indicated that the pond exhibited eutrophic conditions in the summers of 2016 and 2017, conditions which reduce habitat quality for wildlife and reduce the aesthetic quality of the pond (i.e., algae blooms). The highest concentrations of nitrogen and phosphorous occur in July and August, the time period characterized by a lack of outflow from the pond and reduced volumes of water associated with higher temperatures, less inflow, and increased evaporation. Bacterial levels also increase during this period, associated with the more stagnant and nutrient rich waters.

The Town of Narragansett and the Rhode Island Department of Transportation are MS4 operators in the Wesquage Pond watershed and are responsible for preparing and implementing required Stormwater Management Program Plans (SWMPP). The Town of Narragansett submitted to DEM a revised Stormwater Management Program Plan on March 10, 2006. Within this plan are a series of planned goals and deliverables to reduce stormwater runoff within the town. In the more recent Wesquage Pond Watershed Management Plan, September 2023, an Implementation Table with action items to address water quality/flooding issues states prioritized solutions. Higher priority action items include:

- Stormwater Management through implementation of the RIPDES Phase II MS4 Stormwater Management Program Plan.
- Wastewater Management, including the extension of the existing sewerage system.
- Climate Change Concerns, including long-term solution for the pond outflow channel sediment buildup.
- Road Salt and Sand, including consideration for greater street sweeping and salt alternatives.
- Pet Waste and Waterfowl, including education and signage about the impact of animal waste on water quality.
- Lawn and Grounds Management, including education on proper amounts and application of fertilizers to minimize water quality impacts.
- Wetlands and Vegetated Upland Buffer Protection.
- Invasive Species Management.
- Open Space/Conservation, including acquisition or restriction of open space.
- Water Quality Monitoring, and Public Information and Outreach.

The Wesquage Pond Watershed Management Plan and the Town of Narragansett Hazard Mitigation and Stormwater Management Program Plans noted above, the water quality results reported by the URI Watershed Watch program, and the persistent flooding of Bonnet Point Road provide the basis for this proposed project.

## **2. Project Approach:**

*Provide a concise overview of the project, and how using this approach will meet objectives. Explain how the applicant has the access/permission to complete the project. For pollution abatement projects, describe the BMP selected and explain its effectiveness in abating pollution in the targeted waterbody. If applicable, describe the stormwater management program enhancement and how it will reduce impacts of stormwater.*

The BSFD has hired Verdantas, a local environmental engineering firm, to provide the following services to evaluate existing conditions and design solutions to persistent roadway flooding and ecosystem degradation concerns:

- Review Available Data
- Develop Hydraulic Model(s)
- Develop and Assess Potential Alternatives
- Prepare Scope and Cost Estimate(s)

Verdantas has completed initial evaluation work, hydraulic modeling, feasibility studies, and rough-order-of-magnitude engineering cost estimates for the recommended project approach outlined below. This approach has been presented and discussed with area stakeholders including the CRMC, the RIDEM, the Town, the BSBC, and the Bonnet Shores Land Trust, among others.

- Conduct a limited invasive management program to provide unobstructed water flow to hydraulic conveyance system components, to increase the pond storage capacity, and to support native species establishment.
- Engineer and install the following hydraulic conveyance system components:
  - A new channel culvert under the roadway to improve management of peak flows and improve watercourse continuity – to include a structure that limits sand movement inland during storm conditions.
  - Wesquage Pond equalization pipes (clear or replace) beneath Bonnet Point Road to enhance communication between Wesquage Ponds.
  - A back-up flood mitigation conduit between Wesquage Pond and Narragansett Bay to provide additional outlet capacity during peak flows.
- Work with the town to continue GSI efforts throughout the watershed to slow inland stormwater flows to the pond and to improve water quality.
- Install a remote monitoring system and develop an O&M program for suggested alternatives to increase the sustainability of infrastructure and the Wesquage Pond ecosystem.

Recommended improvements and objectives summarized above are consistent with the Wesquage Pond Watershed Management Plan and the Town of Narragansett Hazard Mitigation Plan. Full design and permitting will be completed as a component of the grant funded project, if approved. System size and locations will dictate access agreements with the BSBC and/or adjacent Wesquage and Bonnet Terrace Neighborhood Associations – each of whom will benefit from the project's success.

## **3. Project Tasks:**

*Describe each task in detail in the box provided, including executing a grant agreement with RIDEM, applying for any necessary permits, procurement of services, and development of final report for RIDEM. Identify who is responsible for completing each task, and explain each output associated with a task, e.g., engineering plans, completed construction, final written report etc., describing the deliverable(s). Task schedules and costs shall be provided in Table A below.*

**Task 1 - Grant Agreement Execution:**

The BSFD will work with the RIDEM to complete and execute required grant agreement documentation prior to initiation of the project approach outlined above. The BSFD Board Chair, Carol O'Donnell, will be responsible for agreement execution and administration, with administrative details managed by the District Manager, Mark Gillooly. Task completion will be identified by a fully executed RIDEM grant agreement.

**Task 2 - Final Design, Permitting, Contractor Procurement:**

In preparation of this grant application, the watershed ecosystem was evaluated, and feasibility level analyses were conducted to determine the level of effectiveness of the proposed flood mitigation measures. Hydrologic modeling (HydroCAD) from previous efforts were used as input to a newly developed hydraulic model (HEC-RAS2D). Tide information and sea-level rise information from data for the Newport Rhode Island from NOAA were incorporated into the boundary conditions of the hydraulic model.

The BSFD will continue to work with Verdantas to prepare an invasive species management plan, to identify ideal stormwater management improvement opportunities, and to complete the following hydraulic design services required to gain approval from applicable regulating authorities (CRMC, RIDEM and / or ACOE):

- Refine hydraulic calculations and models developed for the feasibility study to determine final invert elevations and sizes of the Bonnet Point Road culvert / tidal gate, equalization pipes, and the secondary outlet conduit.
- Determine optimal roadway elevation to reduce flooding and provide adequate coverage of culvert under Bonnet Point Road.
- Obtain easements and access for the secondary outlet conduit from Wesquage pond to ocean from adjacent property owners.

In addition, Verdantas shall develop an Operations & Maintenance (O&M) Plan for each suggested hydraulic conveyance system component and an invasive control plan to increase the sustainability of infrastructure and the Wesquage Pond ecosystem.

Draft design documents will be provided to the CRMC through a Preliminary Determination Application, then shared with affected landowners, the Bonnet Shores Land Trust, the Town, and other regulators for review prior to finalization. The BSFD Board Chair, Carol O'Donnell, will be responsible for Verdantas contract management, and the completion of this task will be marked by receipt of agency permits / approvals / assents.

The BSFD will work with Verdantas to prepare contract documents, plans, and bid forms sufficient to meet BSFD competitive procurement requirements. Contractor bids shall be evaluated based on qualifications and experience, technical project approach, and price. Contract documents shall be executed upon BSFD legal review and approval. The BSFD Board Chair, Carol O'Donnell, will be responsible for contract execution, and the District Manager, Mark Gillooly, will be responsible for contract management. Contractor technical submittals, invoices, and progress reports shall be reviewed by Verdantas' engineers, on behalf of BSFD.

**Task 3 - Invasive Species Removal / Upland Buffer Habitat Improvement:**

BSFD shall implement a limited invasive management program to provide unobstructed water flow to proposed hydraulic conveyance system components, to increase the pond storage capacity, and to support native species establishment. The project proposes the clearing of Phragmites growth in areas along critical infrastructure including pond equalization pipes, the pond channel outlet, and proposed back-up pipe inlet (south corner of little pond). A net/cut balance of 1-foot of excavation of Phragmites and adding that 1-foot of overturned/dryer soil medium on top of existing phragmites stands to create a higher upland area bordering Wesquage Pond. These upland buffer areas will be amended for native species planting. Please refer to Figure 5 below for aerial imagery



of the plan. Locations for proposed filling and native species shall be coordinated with stakeholders during the planning / permitting process in Task 2.



Figure 5. Invasive *Phragmites* management plan in the Wesquage Pond area.

The objectives of the invasive management plan are to create beneficial use of the dredged material within the immediate project area, increase the footprint of upland buffers in creation of naturally vegetated habitat, line Bonnet Point Road with native species for sediment/salt pollution reduction, and for aesthetic purposes.

Removing all 22-acres of phragmites is a large undertaking and is not necessarily the best management practice for improving water quality within the watershed. Recent studies have hypothesized that *Phragmites* may play an important role in marsh nitrogen cycling by promoting higher rates of sediment denitrification compared with native marsh species. So, keeping that filtering buffer of *Phragmites* between the residential areas and the pond may in fact help with nutrient uptake and water quality improvement. *Phragmites*' extensive and deep root structures also aid in waterbody bank stabilization. So, the project proposes to remove invasive species where feasible and where it makes most sense (near hydraulic system components or proposed BMPs) and leaving large swaths in place where it is beneficial for water quality and stability purposes.

The invasive management work plan will be developed and permitted under Task 2 (Engineering, Permitting, and Procurement). Documentation of the invasive management program will be provided in accordance with regulatory approvals / permits / assents. Verdantas Professional Wetland Scientist, Lisa Clementoni, PWS, will be responsible for ensuring compliance with regulatory approvals and final reporting.

#### **Install Engineered Hydraulic Conveyance and Sediment Management Systems:**

The *Phragmites* driven pond storage capacity reduction issue will be improved with the proposed partial removal of *Phragmites* as described Task 4. Increasing the pond's storage capacity will allow more rainwater to be captured before flooding occurs along the roadway. To address the reduced outflow capacity of the culvert and Wesquage Pond, three hydraulic conveyance modifications are recommended:

- Task 4 – Outlet Channel Culvert and Tidal Gate:** Increase the size of the culverted Wesquage Pond outlet channel and add a tidal gate to allow for water to exit Wesquage Pond while preventing sediment from entering the pond during storm conditions or high tides. Preventing sediment from entering the pond will preserve volume of the pond while keeping the culvert open to flows when conditions allow water to exit the pond. During the fish migration season, the channel to Narragansett Bay is manually opened and the recommended tidal gate is manufactured so it can be set to be open during certain headwater and tailwater conditions providing connection for fish passage. This option will prevent beach sand from washing into the Wesquage pond while allowing water to exit and maintaining hydraulic connectivity for fish passage.
- Task 5 - Wesquage Pond Equalization Pipes:** Based on hydraulic modelling and engineering design, install additional equalizer pipes between the large and small Wesquage ponds, as needed. The additional equalizer pipes will allow for flow between ponds to access pond outlets.
- Task 6 - Back-up Flood Mitigation Conduit:** Install an outlet conduit from the small Wesquage Pond beyond Bonnet Beach to Narragansett Bay. The outlet conduit will provide additional outflow capacity during heavy storm events or during summer months when the main culvert outlet is blocked by the beach. The outlet conduit will be buried along Bonnet Shores Beach Club western property line from the small pond to Narragansett Bay. Optimal conduit alignment may require coordination and access permission with adjacent Wesquage and Bonnet Terrace Neighborhood Associations. This conduit will be outfitted with a flap gate or check valve, depending upon final outlet design and location, to prevent backflow from Narragansett Bay to Wesquage Pond.

Figure 6 below depicts the proposed locations of the three hydraulic conveyance construction projects.

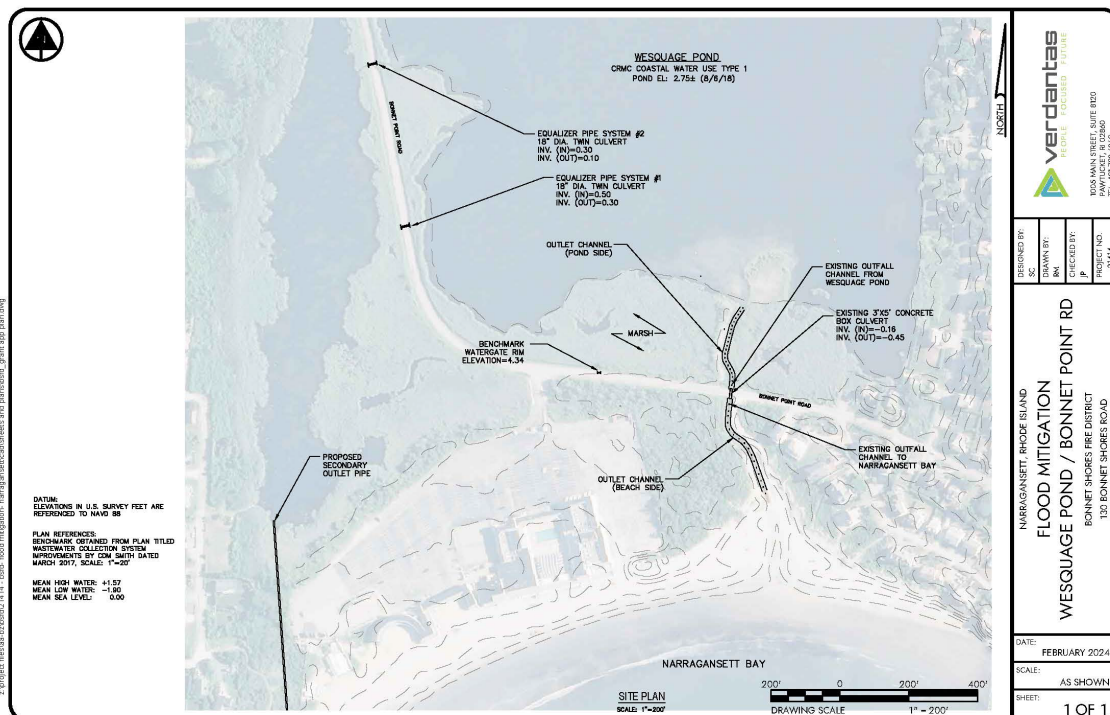


Figure 6. Proposed Hydraulic Conveyance System improvements in the Wesquage Pond area.

Contractor oversight shall be performed by Verdantas engineers to ensure compliance with contract specifications and regulatory approvals. Verdantas shall provide weekly progress reports to the District

Manager, Mark Gillooly. Verdantas shall provide final as-built plans and summary reports to BSFD and appropriate regulators to document the completion of the construction process.

**Task 7 - Town Coordinated Watershed GSI Improvements:**

As part of the Wesquage Pond Watershed Management Plan, an excerpt from the Implementation Table provided below as Figure 7 highlights Green Stormwater Infrastructure (GSI) to reduce stormwater runoff on private or public properties.

The Town of Narragansett and the Rhode Island Department of Transportation are MS4 operators in the Wesquage Pond watershed and are responsible for preparing and implementing required Stormwater Management Program Plans (SWMPP). The town has installed roughly 10 BMPs in the watershed over the last few years as part of fulfilling their MS4 permit requirements, including retention ponds and infiltration berms. To build upon this progress, Verdantas shall offer additional suggested BMPs within the watershed, including installation of green stormwater infrastructure around five (5) outfalls spilling into Wesquage Pond. These GSI projects can include bio-retention basins planted with native vegetation that help filter sediment and other pollutants before entering Wesquage Pond. If sufficient land is available at some outlet structures, forebays and micropools can be designed in the bioretention basin to elevate stormwater control and improve water quality. BSFD / Verdantas has initiated coordination with the Town of Narragansett DPW to continue water quality improvements in the watershed.

Nutrient and Sediment Reduction through Green Stormwater Infrastructure Best Management Practices

**RETROFITTING FOR STORMWATER INFILTRATION** TOPIC Z

Stormwater retrofits are often necessary to improve stormwater management in locations where little or no prior stormwater controls have existed, particularly in urban areas. The Center for Watershed Protection recommends taking a watershed inventory, verifying feasible sites in the field, and using a well-defined set of objectives to guide the choices. Those objectives might include; capacity for pollutant removal, capacity to reduce runoff volume, ability to implement the project, and overall public benefit.

The design of retrofit projects requires special consideration of issues that might not affect BMP construction in new-development, such as avoiding existing utilities and minimizing existing wetland impacts. Maintenance must also be considered even more carefully for retrofits, as space is often at a premium and retrofit BMPs are often undersized. However, the UNH Stormwater Center has found that stormwater systems that are a fraction of the size of conventional designs performed remarkably well (for more, see page 6 of *Breaking Through*, UNHSC 2016 Report).

**Before** **After**

LEFT: This parking lot at Latham Park in Barrington was retrofitted in 2015 and includes a rain garden in the center island and a small buffer of native plants between the impervious surface and the open water (GNP). TOP RIGHT: These vegetated areas retrofitted into a wide asphalt sidewalk in Providence accept runoff from the street. The Steel Yard collaborated with the Green Infrastructure Coalition to make the steel covers that protect the curb cuts from plows and the pedestrian safety fencing. BOTTOM RIGHT: The original large parking lot located in the Woonasquaket River Watershed allowed stormwater to flow directly to the river (RIDEM Environmental Map). The retrofit design by Fuss & O'Neill will decrease impervious surface and catch stormwater in newly-installed bioretention areas, which will also be planted with trees.(WWWC).  
Breaking Through, UNHSC 2016 Report – [https://www.unh.edu/unhsc/sites/default/files/media/unhsc\\_2016\\_report\\_final.pdf](https://www.unh.edu/unhsc/sites/default/files/media/unhsc_2016_report_final.pdf)  
Return to question 49A.

**Implementation Table**

Action Items	Timeframe	Cost Estimate	Priority
<ul style="list-style-type: none"> <li>Lined by Management Topic</li> <li>Unless otherwise specified, actions are the responsibility of the Town</li> </ul>			
<b>Stormwater Management</b>			
Implement the RIPDES Phase II MS4 Stormwater Management Program Plan. (Town and DEM)	Ongoing	\$\$\$	H
<ul style="list-style-type: none"> <li>Consider adopting local stormwater requirements, including soil erosion control, for development projects smaller than one acre (smaller than the state minimum requirement) for new and redevelopment applications.</li> </ul>	3-5 Years	\$	L
<ul style="list-style-type: none"> <li>Establish illicit discharge detection sampling program and address unauthorized connections that contribute pollutants.</li> </ul>	Ongoing	\$	M
<ul style="list-style-type: none"> <li>Establish public outreach program to encourage residential BMPs that improve management of stormwater runoff, such as rain gardens.</li> </ul>	Ongoing	\$	L
<ul style="list-style-type: none"> <li>Identify and prioritize locations for stormwater BMP retrofits throughout the watershed</li> </ul>	Ongoing	\$\$\$	H
<ul style="list-style-type: none"> <li>Increase frequency of stormwater BMP Maintenance</li> </ul>	Ongoing	\$	H
<ul style="list-style-type: none"> <li>Reduce stormwater runoff by encouraging construction of rain gardens and dry wells which facilitate groundwater infiltration on private and public properties.</li> </ul>	1-2 Years (then ongoing)	\$	M
<ul style="list-style-type: none"> <li>Complete the LID Self-Assessment. Review existing planning and development ordinances to evaluate what LID techniques are included, decide what LID techniques would be appropriate for the community to incorporate, and adopt the use of the selected LID techniques into local development regulations for use in proposed development and redevelopment projects.</li> </ul>	1-2 Years	\$	H
<b>Wastewater Management</b>			
Update Onsite Wastewater Management Plan to better address current issues and ongoing projects.	1-2 Years	\$	H
Extend the existing sewerage system to include those properties currently served by onsite wastewater treatment system.	5-10 Years	\$\$\$	H

Excerpt from "Draft – Wesquage Pond Watershed Management Plan"  
[Wesquage-Pond-Watershed-Management-Plan-Draft.pdf \(bonnetshores.org\)](https://www.bonnetshores.org/files/2017/06/Wesquage-Pond-Watershed-Management-Plan-Draft.pdf)

Excerpt from "LID Site Planning and Design Techniques: A Municipal Self-Assessment"  
<https://dem.ri.gov/sites/g/files/xkqbur861/files/programs/benviron/water/permits/ripdes/stwater/t4guide/lid-checklist-primer.pdf>

Figure 7. GSI and Nature Based Solutions and the Wesquage Watershed Management Plan Implementation Table.

**Task 8 – Monitoring and System Operations & Maintenance Planning:**

Following construction of hydraulic conveyance system components, Verdantas shall install a remote monitoring system in key areas of surface water bodies including, the stream inlet to Wesquage Pond, adjacent each side of one set of pond equalization pipes, adjacent the back-up outlet conduit, within the inland pond outlet channel, and along the beach within the Narragansett Bay. Automated, continuous monitoring shall be conducted to gather real-time data during varied weather and beach conditions. Sediment accumulation monitoring of the beach side pond outlet channel shall also be established.

Verdantas shall provide oversight of initial Operations & Maintenance (O&M) Plan implementation to increase the sustainability of infrastructure and the Wesquage Pond ecosystem.

**4. Management and Coordination:**

*Identify who will manage the project (including how contracting and subcontracting will be done). Describe past project management experience. Document all members of the project team and include their titles and role, being clear who is responsible for each major task. Explain how will issues that may arise during implementation be addressed.*

BSFD will manage the BWRP grant agreement and project implementation in accordance with the present BSFD charter and by-laws. BSFD has the experience to administer the BWRP grant agreement, as evidenced by our prior administration of 2017 BRWF grant funding used to dredge significant deposits from the Wesquage Pond and outlet channel. The BSFD manages an annual budget of roughly \$450,000, most of which is designated for district operations and maintenance. A small portion is allocated for planned capital improvement projects. Contractor procurement and financial reporting will be conducted in accordance with district charter and by-laws and supported by BSFD board review and vote, where appropriate. BSFD personnel and project responsibilities include:

- Carol O'Donnell - Board Chair – Project Administrator and Contract Management
- Mark Gillooly - District Manager – Grant Administrator and Project Coordinator
- Board Members – Project and Grant Administration / Oversight
- Carol McEntee – BSFD Resident and State Representative – Stakeholder Communication

The project approach follows guidance provided in the Wesquage Pond Watershed Plan prepared by the Bonnet Shores Land Trust, whose members are also available to support the project.

BSFD procured the services of Verdantas, a local environmental engineering firm, to provide preliminary data evaluation, ecosystem research, stakeholder engagement, hydraulic modeling, feasibility studies, and preliminary engineering estimates for the project. Verdantas is available to continue the design, permitting, contractor procurement support, construction oversight, and regulatory deliverable preparation needed to see the project through to completion. Verdantas holds a state contract (MPA-584B) and is available to support environmental and engineering projects for RI municipalities and state institutions. The following team currently supports the project:

- Mark House, MBA – Senior Program Manager – Regulatory Liaison, Team & Client Management
- Jeff Plant, PE – Lead RI Professional Engineer – Design Review & Quality Control
- Roy Messier, EIT – Project Engineer – Design, Permitting, Construction Management
- Susan Cundiff, PE – Hydraulic Engineer – Hydraulic Modeling and Design
- Gina Tonn, PE – Sustainability Engineer – Stormwater Design, Monitoring and Maintenance
- Lisa Clementoni, PWS - Natural Resources Manager – Invasive Management & Habitat Restoration

The services of qualified contractors shall be procured to complete construction tasks as designed and permitted through the CRMC, RIDEM and/or the ACOE.

Administration or technical issues that may arise will be managed through the BSFD Board Chair, Carol O'Donnell, and directed to appropriate team members for issue resolution. Resolution communication will then back through Carol O'Donnell.

## **5. Project Partners**

*Describe if and how other agencies and/or organizations will participate in or support the project. For each partner, clearly describe their role. If applicable, upload letters of support through the "supplemental documents" file upload and state the filename of the document(s) here.*

BSFD is coordinating the project with the Bonnet Shores Land Trust, the CRMC, the Town of Narragansett, Narragansett Emergency Services (Fire & PD), the RIDEM, URI, the Bonnet Shores Beach Club, Wesquage and Bonnet Terrace Neighborhood Associations, among other stakeholders. Several letters of support have been provided to the BSFD and are attached to this application.

## **6. Organizational Capacity & Experience**

*Characterize current organizational capacity. Identify the authorized agent(s) responsible and what organizational procedures are utilized to: review and execution of any grant agreement contracts; complete procurement requirements such as competitive bidding; complete and submit progress reports or final written reports; record financial transactions; and/or document match. Describe your entity's experience with working on projects with similar type and scale.*

BSFD can administer the 2024 BWRP grant agreement, as evidenced by our prior administration of the 2017 BRWF grant and the management of our annual budget. Carol O'Donnell, BSFD Board Chair, has significant management experience as evidenced by the successful management of her construction businesses and their successful construction projects. Carol will be the project lead and will be responsible for the grant compliance and project administration.

Verdantas has significant experience managing grant funded projects in the fields listed below – project profiles and references are available upon request:

- Natural Resources & Environmental Management
- Sustainability
- Environmental Assessment and Remediation
- Site and Roadway Civil Engineering
- Hydrology, Hydraulics, and Fluids
- Infrastructure Design
- Process Engineering

BSFD will manage the BWRP grant agreement, contracting, and project implementation in accordance with the present BSFD charter and by-laws. Team responsibilities are outlined in Section 4 above.

## **7. Project Monitoring, Maintenance, and/or Progress Measurement:**

*After the project has been completed, describe what inspection, monitoring and/or maintenance will be required, and who will complete these activities. How will improvements be measured, such as nutrient load reductions, reductions in bacteria or other pollutants, or the results of physical restoration, e.g., acres of lakes or wetland restored, linear feet of riparian buffers installed, miles of beaches opened, etc. For construction projects, identify who will verify that the project was constructed as designed, and who will take responsibility to complete any long-term maintenance. For aquatic invasive species management or other habitat restoration projects, identify and describe the follow-up monitoring activities that will be completed to assess the success of the project, and any adaptive management activities anticipated to maintain progress toward goals and objectives.*

As part of the on-going water quality studies and efforts by the University of Rhode Island Watershed Watch and others, improvements to nutrient load reductions, reductions in bacteria and other pollutants will be captured in episodic monitoring reports. As part of permitting of the project, it is assumed that CRMC, RIDEM and/or US Army Corps of Engineers will require a few years of monitoring/reporting of the physical restoration aspects of the project due to impacts to wetlands and waters of the US. Aquatic invasive species removal can be surveyed and monitored to capture if regrowth has occurred. Success rates for the upland habitat creation/restoration along the ponds will most likely also be required for monitoring and reporting by the permitting agencies.

Project maintenance for the roadway culvert will require twice annually opening of the channel to Narragansett Bay for fish passage. High tides and storm surges may still deposit sand at the downstream face of the culvert and will require the opening to be cleared. Hinges and latches on the tidal gate should be inspected periodically to ensure they are functioning properly. The equalizer pipes and outlet conduit from little Wesquage pond should be checked periodically to ensure that openings are free of vegetation and debris.

Remote water level monitoring stations shall be installed within the watershed and data will be periodically evaluated against rain gage data to determine the hydraulic conveyance system's increased capacity. Progress associated with flooding mitigation can be measured by tallying the number of flooding instances of the road and comparing it to previous accounts of roadway flooding during similar storms.

#### **8. Outreach/Public Participation:**

*If applicable, describe how the project results will be shared via public outreach and/or if any public participation is anticipated. If public participation and/or outreach is anticipated, define the target communities. Include meaningful engagement strategies that may be utilized to connect with, involve and/or recruit diverse populations. Where barriers to public participation in your project exist, describe how more equitable opportunities for public participation could be provided.*

Stakeholder engagement is a critical component to problem definition and remedy design and project implementation. The BSFD has and will continue to engage with stakeholder communities including the BSFD residents, Bonnet Shores Beach Club members, Wesquage and Bonnet Terrace Neighborhood Association residents, as well as the technical teams at the Bonnet Shores Land Trust, Town of Narragansett DPW, URI Watershed Watch, and project regulators. Information will be provided to stakeholder group leaders to disseminate to their constituents as appropriate. Post-implementation progress reports and monitoring results shall be periodically made available through the BSFD.

In addition, educational signage may be placed along the watershed (if approved) or via on-line posting describing improvements and/or information on how individuals can positively affect Wesquage Pond water quality or the greater watershed health (pet waste, fertilizer application, septic management, ...).

**9. Description of Supporting Documents (optional)** *If you are uploading supporting documents (such as data, letters of support, etc.) in the BWRP Grant Submission Portal, please provide a brief description of them:*

BSFD has included letters of support from many of the area stakeholders, as noted above.

## BUDGET DETAIL

Note: You can use the below budget table(s) as templates or attach your own budget documents (as long as they contain the same required information identified in Tables A and B).

**What is your source of match?**

Applicant's Funds

Third Party Funds

In-Kind Services

**Table A: Project Tasks<sup>1</sup>, Schedule, and Estimated Costs**

Task #	Task Description	Schedule <sup>2</sup>	Requested Amount	Match Amount
1	Grant Agreement Execution	Month 2	\$0	\$5,000
2	Engineering Design, Permitting & Procurement	Month 6	\$50,000	\$20,000
3	Conduct Invasive Management	Month 7	\$40,000	\$10,000
	Hydraulic Conveyance System Installation:			
4	Install Roadway Culvert Structure	Month 8	\$280,000	20,000
5	Clear Pond Equalization Pipes	Month 9	\$15,000	\$10,000
6	Install Secondary Flood Mitigation Conduit	Month 10	\$0	\$0
7	Town GSI Improvement Coordination	Month 12	\$0	\$30,000
8	Monitoring and Operations & Management	Month 12	\$15,000	\$5,000
Totals			\$400,000	\$100,000

1. Tasks must include progress and final reports.

2. Please express as the month number in which the task is expected to be completed from start of project (i.e., Month 2)

**Table B: Project Costs by Budget Category**

Budget Category						Requested Grant Amount	Match Amount	Total Cost of Category
<b>1. Salary and Fringe<sup>1</sup></b>								
Name	Title	Salary	Percent Time Charged to Project	Fringe (as percent of salary)	Total Salary Cost			
Carol O'Donnel	Board Chair	\$31.80/hr	80		\$ 2,544.00	\$ 0.00	\$ 2,544.00	\$ 2,544.00
Mark Gollooly	District Manager	\$31.80/hr	160		\$ 5,088.00	\$ 0.00	\$ 5,088.00	\$ 5,088.00
Board Members	Board Members	\$31.80/hr	280		\$ 8,904.00	\$ 0.00	\$ 8,904.00	\$ 8,904.00
<b>2. Indirect Costs<sup>2</sup></b>								
								\$ 0.00
<b>3. Supplies<sup>3</sup></b>								
								\$ 0.00
								\$ 0.00
<b>4. Equipment<sup>4</sup></b>								
								\$ 0.00
<b>5. Travel and Training<sup>5</sup></b>								
								\$ 0.00
<b>6. Contractual<sup>6</sup></b>								
						\$ 65,000.00	\$ 43,464.00	\$ 108,464.00
<b>7. Construction<sup>7</sup></b>								
						\$ 335,000.00	\$ 40,000.00	\$ 375,000.00
<b>8. Other<sup>8</sup></b>								
								\$ 0.00
<b>Totals</b>						\$ 400,000.00	\$ 100,000.00	\$ 500,000.00
Enter the grant % and match % in the respective columns. Note: no less than 25% of total projects costs required).								

**Table B notes:**

1. Include salaries and fringe benefits paid for work performed on the project. "Salary" should include the rate per hour by position. "Fringe benefits" are employment benefits given in addition to wages or salary, such as health, retirement, etc. Grant funds are typically not used to pay municipal employee's salaries; these expenses should be used as match.
2. Indirect costs can only be charged by those entities that have negotiated an indirect rate with the State of RI in advance.
3. Supplies include expendable items, such as office, field and lab supplies, film, postage, books or equipment etc. costing less than \$5,000.
4. Equipment includes any items of equipment costing more than \$5,000. Equipment under \$5,000 should be captured under the supplies row.
5. Travel and Training includes transportation costs incurred during work, such as tolls, costs of using vehicle (vehicle costs = number of miles x mileage rate).
6. Includes procured services not provided by grantee, such as consultants, engineering, and design services, etc. Projects must identify tasks and outputs for each contractor. If contractual work has not yet been bid, provide estimated costs.
7. Construction costs include costs associated with construction of BMPs, including permit fees.
8. Other costs includes costs not described by previous categories.

Project Back-up Spreadsheets are attached.



## APPLICANT CERTIFICATION AND SIGNATURE

By submitting this application, I acknowledge that I am authorized to submit this request on behalf of the organization and that, to the best of my knowledge, the materials submitted under this application, including the project narrative and budget, are complete and accurate.

Authorized Signature: Carol O'Donnell

Date: \_\_\_\_\_

Printed Name: \_\_\_\_\_

Title: \_\_\_\_\_

**Culvert Replacement**

R.O.M. Cost Opinion

Bonnet Shores Fire District

Wesquage Pond / Bonnet Point Rd

Flood Mitigation

Date: February 2024

**VERDANTAS, LLC**

1005 Main Street, Suite 8120

Pawtucket, RI 02860

Phone: 401-728-6860

www.verdantas.com

TASK NO.	ITEM NAME	UNITS	QUANTITY	UNIT COST	COST ESTIMATE
<b>Replace Existing Culvert and Install New Tide Gate</b>					
001	Mobilization & Demobilization	LS	1	\$15,000	\$15,000
002	Traffic Control	LS	1	\$15,000	\$15,000
003	Erosion Controls	LS	1	\$3,000	\$3,000
004	Temporary By-pass	LS	1	\$15,000	\$15,000
005	Remove & Dispose Culvert	LS	1	\$5,000	\$5,000
006	Furnish & Install New Box Culvert	LS	1	\$85,000	\$85,000
007	Furnish & Install New Head Wall	LS	1	\$10,000	\$10,000
008	Furnish & Install New Tide Gate	LS	1	\$40,000	\$40,000
009	Channel Excavation	LS	1	\$20,000	\$20,000
010	Repair Existing Disturbed Roadway	LS	1	\$30,000	\$30,000
				<b>SUB-TOTAL</b>	<b>\$238,000</b>
				<b>15% Contingency</b>	<b>\$35,700</b>
				<b>CONSTRUCTION</b>	<b>\$273,700</b>
	Construction Administration Services (assume 10% of Construction Estimate)			<b>Construction Admin Services</b>	<b>\$27,370</b>
				<b>TOTAL</b>	<b>\$301,070</b>

**Notes:**

1. All Quantities are approximate; Unit Prices obtained from recent RIDOT Weighted Average Unit Prices

**New Secondary Outlet Pipe**  
**R.O.M. Cost Opinion**  
**Bonnet Shores Fire District**  
**Wesquage Pond / Bonnet Point Rd**  
**Flood Mitigation**  
**Date: February 2024**



TASK NO.	ITEM NAME	UNITS	QUANTITY	UNIT COST	COST ESTIMATE
<b>Install New Secondary Outlet Pipe</b>					
001	Mobilization & Demobilization	LS	1	\$15,000	\$15,000
002	Erosion Controls	LS	1	\$5,000	\$5,000
003	Excavation	LF	800	\$25	\$20,000
004	Furnish & Install New Outlet Pipe (assume 48" diameter)	LF	800	\$300	\$240,000
005	Furnish & Install New Head Wall	LS	1	\$10,000	\$10,000
006	Furnish & Install New Tide Gate	LS	1	\$36,000	\$36,000
				<b>SUB-TOTAL</b>	<b>\$326,000</b>
				<b>15% Contingency</b>	<b>\$48,900</b>
				<b>CONSTRUCTION</b>	<b>\$374,900</b>
	Construction Administration Services (assume 10% of Construction Estimate)			<b>Construction Admin Services</b>	<b>\$37,490</b>
				<b>TOTAL</b>	<b>\$412,390</b>

**Notes:**

1. All Quantities are approximate; Unit Prices obtained from recent RIDOT Weighted Average Unit Prices

**Clear Equalizer Pipes**

R.O.M. Cost Opinion

Bonnet Shores Fire District

Wesquage Pond / Bonnet Point Rd

Flood Mitigation

Date: February 2024

**VERDANTAS, LLC**

1005 Main Street, Suite 8120

Pawtucket, RI 02860

Phone: 401-728-6860

www.verdantas.com

TASK NO.	ITEM NAME	UNITS	QUANTITY	UNIT COST	COST ESTIMATE
<b>Clear Equalizer Pipes</b>					
001	Mobilization & Demobilization	LS	1	\$5,000	\$5,000
002	Traffic Control	LS	1	\$4,000	\$4,000
002	Erosion Controls	LS	1	\$2,000	\$2,000
003	Clear 18" Pipes at Equalizer Locations	EA	4	\$2,000	\$8,000
				<b>SUB-TOTAL</b>	<b>\$19,000</b>
				<b>15% Contingency</b>	<b>\$2,850</b>
				<b>CONSTRUCTION</b>	<b>\$21,850</b>
	Construction Administration Services (assume 10% of Construction Estimate)			<b>Construction Admin Services</b>	<b>\$2,185</b>
				<b>TOTAL</b>	<b>\$24,035</b>

## Notes:

1. All Quantities are approximate; Unit Prices obtained from recent RIDOT Weighted Average Unit Prices

**Invasive Vegetation Management**

R.O.M. Cost Opinion

Bonnet Shores Fire District

Wesquage Pond / Bonnet Point Rd

Flood Mitigation

Date: February 2024

**VERDANTAS, LLC**

1005 Main Street, Suite 8120

Pawtucket, RI 02860

Phone: 401-728-6860

www.verdantas.com

TASK NO.	ITEM NAME	UNITS	QUANTITY	UNIT COST	COST ESTIMATE
<b>Invasive Vegetation Management</b>					
001	Mobilization & Demobilization	LS	1	\$5,000	\$5,000
002	Traffic Control	LS	1	\$4,000	\$4,000
003	Remove & Dispose Invasive Vegetation/Soil Medium along Equalizer Pipes	CY	300	\$50	\$15,000
003	Remove & Dispose Invasive Vegetation/Soil Medium along Culvert Channel	CY	150	\$50	\$7,500
003	Remove & Dispose Invasive Vegetation/Soil Medium along New Outlet Pipe Location	CY	200	\$50	\$10,000
				<b>SUB-TOTAL</b>	<b>\$41,500</b>
				<b>15% Contingency</b>	<b>\$6,225</b>
				<b>CONSTRUCTION</b>	<b>\$47,725</b>
	Construction Administration Services (assume 10% of Construction Estimate)			<b>Construction Admin Services</b>	<b>\$4,773</b>
				<b>TOTAL</b>	<b>\$52,498</b>

**Notes:**

1. All Quantities are approximate; Unit Prices obtained from recent RIDOT Weighted Average Unit Prices

## BSFD BWRP Grant Application - Match Breakdown

### Volunteer Time:

resource	position	hours	rate	total
Suggested				
Carol O'Donnell	FD Chair	80	\$ 31.80	\$ 2,544.00
Mark Gillooly	FD Manager	160	\$ 31.80	\$ 5,088.00
Laurie McCarthy	1 Board Member	40	\$ 31.80	\$ 1,272.00
William Delgizzo	Board Member	80	\$ 31.80	\$ 2,544.00
Steve Danazar	Board Member	40	\$ 31.80	\$ 1,272.00
Carol McEntee	3 Board Member	80	\$ 31.80	\$ 2,544.00
Terrance Beaty	Board Member	40	\$ 31.80	\$ 1,272.00
		520		<b>\$ 16,536.00</b>

In-Kind Services:	event	cost	quantity	total
Culvert Cleaning	storm 12/2/2023	\$ 13,175.00	1	\$ 13,175.00
	storm 1/24/2024	\$ 10,162.50	1	\$ 10,162.50
Town Contribution	past storms	\$ 5,000.00	4	\$ 20,000.00
	anticipated	\$ 5,000.00	2	\$ 10,000.00
BSBC Contribution	past storms	\$ 10,000.00	4	\$ 40,000.00
	anticipated	\$ 10,000.00	2	\$ 20,000.00
Dune Restoration	anticipated	\$ 20,000.00	1	\$ 20,000.00
				<b>\$ 133,337.50</b>

Bonnet Shores Fire District Cash Contribution: **\$ 50,000.00**  
Total Match (Volunteer Time, In-Kind Services, and Cash): **\$ 199,873.50**



# State of Rhode Island

## HOUSE OF REPRESENTATIVES

REPRESENTATIVE CAROL HAGAN McENTEE, *District 33*  
*Chair, Committee on Small Business*  
*First Vice- Chair, Committee on Judiciary*  
*Committee on Environment and Natural Resources*  
*Committee on Labor*

February 27, 2024

Sean McCormick  
Rhode Island Department of Environmental Management  
Water Resources Department  
235 Promenade Street  
Providence, RI 02908

Dear Mr. McCormick,

As the State Representative of District 33, which includes the Bonnet Shores Fire District (BSFD), I write this letter in support of the BSFD's grant application to fund the Wesquage Pond Flood Mitigation and Pond Restoration Project.

The BSFD is seeking funding from the RIDEM Narragansett Bay Watershed Restoration Fund (BWRP) to make much-needed improvements in the Wesquage Pond Watershed by:

- Conducting a limited invasive management program to provide clear water flow to hydraulic system components, increasing pond storage capacity, and supporting native species establishment;
- Engineering and installing a new channel culvert under the roadway to improve management of rainfall driven flooding to the pond, including a structure that limits sand movement inland during storm conditions;
- Clearing or replacing Wesquage Pond equalization pipes beneath Bonnet Point Road;
- Installing a back-up flood mitigation conduit between Wesquage Pond and the ocean;
- Working with the town to continue GSI efforts throughout the watershed to slow inland stormwater flows to the pond and improving water quality;
- And installing a remote monitoring system and developing a permitted O&M program for suggested alternatives.

The BSFD has completed initial evaluation work and hydraulic modeling, and they will provide rough-order-of-magnitude engineering cost estimates for each item above to accompany the grant including full design and permitting.

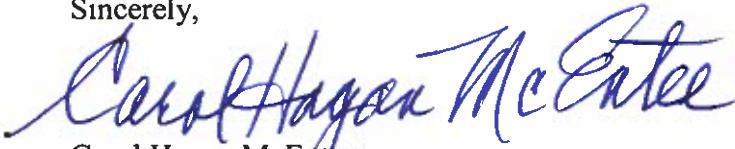
The BSFD is coordinating the project with the CRMC, the RIDEM, the Town, the Bonnet Shores Beach Club, and the Bonnet Shores Land Trust, among other stakeholders. This is an incredibly

Page 2  
February 27, 2024  
Sean McCormick

important project for the residents and visitors of Narragansett and I respectfully urge you to approve this vital grant application.

If you have any other questions or concerns regarding this grant application, please do not hesitate to contact me.

Sincerely,

A handwritten signature in blue ink that reads "Carol Hagan McEntee". The signature is written in a cursive style with a large initial 'C'.

Carol Hagan McEntee  
RI Representative - District 33  
South Kingstown, Narragansett





## Bonnet Shores Beach Club Condominium Association

175 Bonnet Point Road, Narragansett, RI 02882

Phone (401) 783-2832 • Fax (401) 783-2488

[www.bonnetshoresbeachclub.com](http://www.bonnetshoresbeachclub.com)

February 27, 2024

Rep. Carol Hagan McEntee  
House District 33  
Narragansett & South Kingstown

Dear Representative McEntee,

The Bonnet Shores Beach Club (BSBC) welcomes any effort to mitigate persistent flooding along Bonnet Point Road.

In the past three storms, we estimate that our time, materials and services to the Fire District were at, or near, \$30,000.00, and future storms this Spring may add to this amount.

As you may know, the BSBC works hand in glove with the Bonnet Shores Fire District (BSFD) to keep the culvert under the roadway open and the stream flowing so that water may flow out of Wesquage Pond into the ocean.

Any mitigation efforts to lower the level of water in Wesquage Pond undertaken by the BSFD would be greeted favorably by the beach club as our property abuts the pond, and our parking lot frequently floods after a large rainstorm.

Additionally, after large storms, the beach club parking lot is frequently used as a storage area for sand removed from the pond. At its own expense, the beach club moves the sand back to Kelly Beach and uses its own equipment to return the beach to its original grade and slope.

Moreover, reducing the level of water in the pond is a public safety issue. It would reduce the repeated flooding of the causeway. It would reduce the frequency with which the causeway must be closed due to flooding, and it would reduce public safety issues which the closing of the causeway creates vis-a-vis the Narragansett Police and Fire Departments.

Sincerely,

Mark Mesrobian, General Manager  
Bonnet Shores Beach Club Condominium Association



## TOWN OF NARRAGANSETT

Fire Department, 40 Caswell Street, Narragansett, RI 02882-3393  
Tel. 789-1000

Chief of Department  
Scott M. Partington

From: Narragansett Fire Chief, EMA Director Scott M. Partington

RE: Wesquage Pond Inundation & Bonnet Shores Causeway

Date: February 20, 2024

To Whom It May Concern,

It has come to my attention that the Bonnet Shores Fire District is actively pursuing funding through the Narragansett Bay and Watershed Restoration Fund within the Flood Prevention and Mitigation grant category. Flood Prevention and Mitigation Projects seek to reduce or eliminate the long-term risk of flooding in coastal or inland areas and enhance natural ecosystem functions. Eligible projects include the restoration of floodplains, removal of impervious surfaces and re-vegetation in flood-prone areas, in addition to culvert replacements. The Rhode Island Department of Environmental Management (DEM) is seeking projects, such as the one proposed by the Bonnet Shores Fire District that is focused on improving water quality, building capacity for stormwater management, and restoring aquatic habitats.

I understand the purpose of the district's request is to help mitigate the ongoing concerns with inundation into Wesquage Pond due to persistent stormwater runoff, erosion, and flooding which in turn has undermined the integrity of the Bonnet Shores Causeway - a vital route into and out of Bonnet Shores. The preservation of Wesquage Pond and Bonnet Shores Causeway are projects which I continue to fully support, and which were originally brought to the attention of the former RIEMA Director, Peter Gaynor – who toured this site with me in December of 2015 and was subsequently placed on our town's RIDOT - Transportation Improvement Program (TIP) high priority project list and repeatedly submitted to the RIDOT-TIP's program.

Two major areas of public safety currently exist that I believe are directly linked to the inundation occurring in Wesquage Pond:

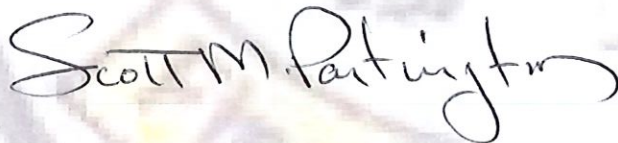
1. Emergency response
2. Evacuation routes

This roadway serves as one of only two immediate and direct routes for emergency response vehicles into and out of the Bonnet Shores District. The Bonnet Shores causeway serviced via Bonnet Point Road is a key piece in the primary road loop that serves Bonnet Shores' 2,000 + residents. Fire, EMS, & Police response is often diverted around this flooded-closed causeway resulting in delayed on-scene emergency services and extended EMS patient transports to the hospital.

Due to persistent flooding and/or ice coverage, there are numerous times throughout the year when this roadway is closed to vehicular traffic. As a result of its current unreliable condition, this roadway cannot be designated as a local evacuation route and residents must seek a much slower alternate route around the pond. The proposed dredging of Wesquage Pond in conjunction with enhanced stormwater management, and erosion control as presented within the project's scope are aimed at alleviating the overflow and preservation of the pond. These mitigation efforts could potentially have a significant impact towards improving and preserving the roadway conditions around the causeway, thereby dramatically enhancing not only emergency response times, but also the evacuation routes for the residents of Bonnet Shores.

I hope that you will consider the merits of this project not only from a public safety standpoint but also on the potential to prevent or mitigate the impacts of the flooding on the ecological functioning of the pond's natural ecosystems.

Sincerely,



Chief Scott M. Partington  
Narragansett Fire Rescue Department